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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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| | | |
|--|--|---------------------------------------|
| UTILITY PATENT APPLICATION TRANSMITTAL <small>(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))</small> | Attorney Docket No. | 678-172 |
| | First Inventor or Application Identifier | Dimitri Kanevsky |
| | Title | System and Method for Providing a ... |
| | Express Mail Label No. | EL484185262US |

| | |
|--|--|
| APPLICATION ELEMENTS <small>See MPEP chapter 600 concerning utility patent application contents.</small> | ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231 |
| 1. <input checked="" type="checkbox"/> * Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing) | 5. <input type="checkbox"/> Microfiche Computer Program (Appendix) |
| 2. <input checked="" type="checkbox"/> Specification [Total Pages 49] (preferred arrangement set forth below) <ul style="list-style-type: none">- Descriptive title of the Invention- Cross References to Related Applications- Statement Regarding Fed sponsored R & D- Reference to Microfiche Appendix- Background of the Invention- Brief Summary of the Invention- Brief Description of the Drawings (if filed)- Detailed Description- Claim(s)- Abstract of the Disclosure | 6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) <ul style="list-style-type: none">a. <input type="checkbox"/> Computer Readable Copyb. <input type="checkbox"/> Paper Copy (identical to computer copy)c. <input type="checkbox"/> Statement verifying identity of above copies |
| 3. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 4] | ACCOMPANYING APPLICATION PARTS 7. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s)) 8. <input type="checkbox"/> 37 C.F.R. § 3.73(b) Statement <input type="checkbox"/> Power of Attorney (when there is an assignee) 9. <input type="checkbox"/> English Translation Document (if applicable) 10. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input checked="" type="checkbox"/> Copies of IDS Citations 11. <input type="checkbox"/> Preliminary Amendment 12. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) * Small Entity 13. <input type="checkbox"/> Statement(s) <input type="checkbox"/> Statement filed in prior application, Status still proper and desired (PTO/SB/09-12) 14. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 15. <input type="checkbox"/> Other: _____ |
| 4. Oath or Declaration [Total Pages 6] <ul style="list-style-type: none">a. <input checked="" type="checkbox"/> Newly executed (original or copy)b. <input type="checkbox"/> Copy from a prior application (37 C.F.R. § 1.63(d)) (for continuation/divisional with Box 16 completed)<ul style="list-style-type: none">i. <input type="checkbox"/> <u>DELETION OF INVENTOR(S)</u> Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b). | |
| * NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28). | |

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

Prior application information: Examiner: _____ Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS☐ Customer Number or Bar Code Label or ☒ Correspondence address below
(Insert Customer No. or Attach bar code label here)

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|---------|--|-----------|----------------|----------|----------------|
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|-------------------|------------------------|-----------------------------------|---------|
| Name (Print/Type) | Paul J. Farrell | Registration No. (Attorney/Agent) | 33,494 |
| Signature | <i>Paul J. Farrell</i> | Date | 9/14/00 |

CERTIFICATION UNDER 37 C.F.R. § 1.10 I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL484185262US addressed to: Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231.

Dated: September 14, 2000

Ridge Holmberg

FEE TRANSMITTAL

for FY 2000

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT (\$ 2,566.00

Complete if Known

Application Number
Filing Date
First Named Inventor Dimitri Kanevsky
Examiner Name
Group / Art Unit
Attorney Docket No. 678-172

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number 50-0510/IBM (Yorktown Heights)

Deposit Account Name IBM

☒ Charge Any Additional Fee Required
Under 37 CFR §§ 1.16 and 1.17

2. ☐ Payment Enclosed:

☐ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description | Fee Paid |
|----------------------------|----------------------------|------------------------|----------|
| 101 690 | 201 345 | Utility filing fee | \$690.00 |
| 106 310 | 206 155 | Design filing fee | |
| 107 480 | 207 240 | Plant filing fee | |
| 108 690 | 208 345 | Reissue filing fee | |
| 114 150 | 214 75 | Provisional filing fee | |

SUBTOTAL (1) (\$ 690.00

2. EXTRA CLAIM FEES

| Total Claims | Extra Claims | Fee from below | Fee Paid | |
|--------------------|--------------|----------------|----------|-------|
| 83 | -20** = 63 | \$18 | \$1,134 | |
| Independent Claims | 12 | -3** = 9 | \$78 | \$702 |
| Multiple Dependent | | \$260 | | |

**or number previously paid, if greater; For Reissues, see below

Large Entity Small Entity

| Fee Code (\$) | Fee Code (\$) | Fee Description |
|---------------|---------------|--|
| 103 18 | 203 9 | Claims in excess of 20 |
| 102 78 | 202 39 | Independent claims in excess of 3 |
| 104 260 | 204 130 | Multiple dependent claim, if not paid |
| 109 78 | 209 39 | ** Reissue independent claims over original patent |
| 110 18 | 210 9 | ** Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2) (\$ 1,836.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description | Fee Paid |
|----------------------------|----------------------------|--|----------|
| 105 130 | 205 65 | Surcharge - late filing fee or oath | |
| 127 50 | 227 25 | Surcharge - late provisional filing fee or cover sheet. | |
| 139 130 | 139 130 | Non-English specification | |
| 147 2,520 | 147 2,520 | For filing a request for reexamination | |
| 112 920* | 112 920* | Requesting publication of SIR prior to Examiner action | |
| 113 1,840* | 113 1,840* | Requesting publication of SIR after Examiner action | |
| 115 110 | 215 55 | Extension for reply within first month | |
| 116 380 | 216 190 | Extension for reply within second month | |
| 117 870 | 217 435 | Extension for reply within third month | |
| 118 1,360 | 218 680 | Extension for reply within fourth month | |
| 128 1,850 | 228 925 | Extension for reply within fifth month | |
| 119 300 | 219 150 | Notice of Appeal | |
| 120 300 | 220 150 | Filing a brief in support of an appeal | |
| 121 260 | 221 130 | Request for oral hearing | |
| 138 1,510 | 138 1,510 | Petition to institute a public use proceeding | |
| 140 110 | 240 55 | Petition to revive - unavoidable | |
| 141 1,210 | 241 605 | Petition to revive - unintentional | |
| 142 1,210 | 242 605 | Utility issue fee (or reissue) | |
| 143 430 | 243 215 | Design issue fee | |
| 144 580 | 244 290 | Plant issue fee | |
| 122 130 | 122 130 | Petitions to the Commissioner | |
| 123 50 | 123 50 | Petitions related to provisional applications | |
| 126 240 | 126 240 | Submission of Information Disclosure Stmt | |
| 581 40 | 581 40 | Recording each patent assignment per property (times number of properties) | \$40 |
| 146 690 | 246 345 | Filing a submission after final rejection (37 CFR § 1.129(a)) | |
| 149 690 | 249 345 | For each additional invention to be examined (37 CFR § 1.129(b)) | |

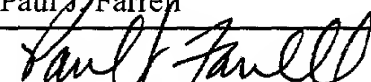
Other fee (specify) _____

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00

SUBMITTED BY

| | | |
|---|--|--------------------------|
| Name (Print/Type) Paul J. Farrell | Registration No. (Attorney/Agent) 33,494 | Telephone (516) 228-8484 |
| Signature  | Date September 14, 2000 | |

CERTIFICATION UNDER 37 C.F.R. § 1.10 I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL484185262US addressed to: Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231

Dated: September 14, 2000

Tidge Holmberg

PATENT

Atty. Docket No. YOR9-2000-0367 (728-172)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Assistant Commissioner
for Patents
Washington, D.C. 20231



UTILITY APPLICATION FEE TRANSMITTAL

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): Dimitri Kanevsky; Sara H. Basson; Peter G. Fairweather; and Alexander Zlatsin

For: SYSTEM AND METHOD FOR PROVIDING A PRINTING CAPABILITY FOR A TRANSCRIPTION SERVICE OR MULTIMEDIA PRESENTATION

Enclosed are:

[X] 18 page(s) of specification

[X] 1 page(s) of Abstract

[X] 30 page(s) of claims

[X] 4 sheets of drawings [X] formal ☐ informal

[X] 6 page(s) of Declaration and Power of Attorney

[X] An Assignment of the invention to International Business Machines Corporation

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date September 14, 2000 in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL484185262US addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Tidge Holmberg
(Type or print name of person mailing paper)


(Signature of person mailing paper)

- ☐ This application claims the benefit under 35 U.S.C. §119(e) of U.S. Provisional Application(s) No(s).:

APPLICATION NO(S).:

FILING DATE

- ☐ Certified copy of applications

Country

Appln. No.

Filed

from which priority under Title 35 United States Code, § 119 is claimed
☐ is enclosed.

☐ will follow.

CALCULATION OF UTILITY APPLICATION FEE

| For | Number Filed | Number Extra | Rate | Basic Fee \$690.00 |
|--|--------------|--------------|------------------|-----------------------|
| TOTAL CLAIMS | 83 | 63 | x 18 = | \$1,134.00 |
| INDEPENDENT CLAIMS | 12 | 9 | x 78 = | \$702.00 |
| <input type="checkbox"/> Multiple Dep. Claim | | | 260 | \$0 |
| | | | TOTAL \$2,526.00 | |

- ☐ Verified Statement of "Small Entity" Status Under 37 C.F.R. § 1.27. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$.

*Includes all independent and single dependent claims and all claims referred to in multiple claims. See 37 C.F.R. § 1.75(c).

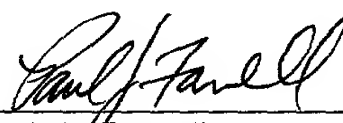
☐ The amount of \$40.00 for recording the attached Assignment is enclosed as a separate check.

☐ Check in the amount of \$__ to cover the ☐ recording, ☒ filing fee(s) are attached.

☒ Charge fees (\$40.00 for Assignment and \$2,526.00 for filing fee) to Deposit Account No. 50-0510/IBM (Yorktown Heights).

☒ Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.16 and 1.17, at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 50-0510/IBM (Yorktown Heights). Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-0510/IBM (Yorktown Heights) therefor. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Date: September 14, 2000



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**SYSTEM AND METHOD FOR PROVIDING A PRINTING CAPABILITY
FOR A TRANSCRIPTION SERVICE
OR MULTIMEDIA PRESENTATION**

BACKGROUND OF THE INVENTION

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1. Field of the Invention

10 This invention relates to a device and method for printing transcriptions of meetings, events, etc., and in particular, to a system and method of printing a transcription on a fax in real time.

2. Description of the Related Art

15 Transcriptions, whether created by a computer running an Automatic Speech Recognition (ASR) program or by a stenographer, are typically displayed on a computer monitor in real time. Thus, when depositions, meetings, speeches, etc. are transcribed, the transcribed text appears line by line on a computer screen. However, a computer monitor may not always be available to display the transcribed text in real time. Indeed, even in environments which have computer monitors, they may not be available for the purpose of displaying real time transcribed text, because they are being used for other functions.

20 In a similar vein, with the spread of embedded technologies and smaller computer units, such as palm-tops, the ability to provide portable transcription service will become more important. But the small screens on such devices are ill-suited for displaying transcribed text.

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Therefore, there is a need for additional devices that are capable of displaying transcribed text in real time, as well as a method to provide such functionality to those devices. In addition, this system and method should use a device that is present in most working environments to provide this functionality.

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SUMMARY OF THE INVENTION

One aspect of this invention is to provide a transcription system and method that allows the use of a facsimile (fax) machine to display transcribed text.

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Another aspect of this invention is to provide a system and a method for the use of fax machines in multimedia presentations.

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Yet another aspect of the invention is to provide a system for other peripheral or stand-alone devices to provide a printing capability for a transcription service or a multimedia presentation.

20

These and other aspects are fulfilled by the proposed system and method for using printing devices for transcribed text or a multimedia presentation is proposed. Using the system and method, a printing capability using peripheral or stand-alone devices is realized. In the system and method, portions of a multimedia presentation, transcribed text, or both are output to a printing device. In the preferred embodiment, transcribed text is output to a fax machine by means of a Real Time Transcription Fax Server, which

can also interleave other material into the fax output, and/or synchronize the fax output with other devices, such as monitors and speakers.

BRIEF DESCRIPTION OF THE DRAWINGS

5 The foregoing and other objects, aspects and advantages will be better understood from the following detailed description of preferred embodiments of the invention with reference to the following drawings. In the drawings, the same reference numbers in different drawings denote the same objects.

10 FIG. 1 is a block diagram of a real time transcription fax system according to the preferred embodiment of the present invention;

 FIG. 2 is a block diagram of the modules comprising a real time transcription fax server according to the preferred embodiment of the present embodiment;

15 FIG. 3 is a block diagram of the Multimedia Integration Module according to the preferred embodiment of the present embodiment;

 FIG. 4 is a block diagram of the Multimedia Synchronization Module according to the preferred embodiment of the present invention;

20

FIG. 5 is a block diagram showing the advantages of the Fragment Management Module according to the preferred embodiment of the present invention; and

FIG. 6 is a drawing of an input dialog box for a user to indicate the parameters of a real-time transcription according to the preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In the following description of the preferred embodiment of the present invention, many specific items are described, but these details are provided only for a complete understanding of the present invention, and thus it will be understood by those skilled in the art that the present invention can be performed without such specified items or with modifications thereof. Detailed descriptions of certain items that are well-known to one with skill in the art are omitted in order that the description of the preferred embodiment not be overwhelmed with irrelevant details.

In the preferred embodiment of the present invention, a fax machine is enabled to provide a printout of real-time transcribed text, as well as multimedia presentations. A real-time transcription fax print server, which can perform the appropriate translations and fax machine commands, receives transcription or multimedia data, processes it, and forwards the data to the appropriate peripheral units. In this and the following description, the term “server” is used in a generic functional sense. In other words, the term “server” should be understood within the client/server architectural model—the

client requests a service, the server provides a service. Thus, the real time transcription fax print server described below may exist as any combination of software, firmware, or hardware. However much of the print server is implemented in software, firmware, or hardware is open to many variations, as is well known in the art. The clients also may
5 take any form—whether a transcription program resident on a personal computer (PC), a stenographer typing into a stenograph writer, multimedia presentation software, etc.

Furthermore, the terms “network” and “computer” are used in the most general sense. A “computer” is any computing means, from a single microprocessor or micro-
10 controller to a computer system distributed over multiple processing nodes. A “network” includes any means that connects devices, whether computers, telephones, or other devices. Other terms in the text are also to be understood in a generic functional sense, as would be known by one skilled in the art.

15 An overview of the preferred embodiment of the present invention will be described with reference to FIG. 1. In FIG. 1, the real time transcription (RTT) fax print server 100 is connected to an Ethernet local area network (LAN) 101. Also connected to LAN 101 is a Personal Digital Assistant (PDA) 110, which has a built-in microphone and resident Automatic Speech Recognition (ASR) software, a computer 129, which is
20 connected to a stenograph writer 120 and has a program to translate stenograph input into text, and a computer 139, connected to a camera 135 and a microphone 130. These devices represent some of the different forms of input that may be used with the preferred

embodiment. Each input device has the capability of turning spoken words into text, whether by ASR (in PDA 110 and computer 139) or by a human stenographer with a stenography translation program (resident in computer 129). This text is sent to the RTT fax print server 100, which processes it in such a manner that it can be output to fax machine 150. The output could also go to a fax program on a computer 169, a fax palm device, or an embedded miniature fax device.

The real time transcription fax print server 100 is not shown as embodied in any particular device in FIG. 1, as it could be implemented in any of the computers 129, 139, or 169, in PDA 110, embedded in stenograph writer 120, or embedded in microphone 130. It should be noted that, although the preferred embodiment uses Ethernet LAN 101, any connection between the RTT fax print server 100, the input/transcription device, and the fax machine 150 could be used. For example, in another embodiment, the RTT fax print server is realized in a transcription-enabled PDA, which is connected directly to a fax machine by a telephone wire.

It should be noted that, although it is termed a “real time transcription fax print server” in reference to the preferred embodiment, the print server does not necessarily translate “transcriptions”, but may deal with graphics, images and the like, as described below. Furthermore, the print server does not necessarily output to a “fax”, but may output to a printer, or to fax emulation software running on a processor. Lastly, the print

server does not necessarily have “real time” input, but may take input from a storage means.

Computer 139 is capable of multimedia presentations, and could be used for a real time videoconference, a televised speech, or an audio/video (a/v) presentation. When this is used, a participant or viewer with access to computer 169 and fax machine 150 will have enhanced capabilities by means of the RTT fax print server 100. For example, if an a/v presentation is being given, the viewer could listen by means of speakers 160, watch the presenter on the monitor of computer 169, and simultaneously receive additional text or imagery by means of fax machine 150. Furthermore, the fax machine, through use of the RTT fax print server 100, could be used to print out other forms of continuous streaming data, such as stock quotes or news flashes, while the reader is using computer 169 for other purposes.

Now, a more in-depth description of the modules comprising RTT fax print server 100 will be described with reference to FIG. 2. An input/output (I/O) Communication Module 210 is the interface with network 101, thus providing the capability to both receive and transmit information from other devices connected to network 101. Connected to the I/O Module 210 are Fax Connection Module (FCM) 220, Multimedia Integration Module (MIM) 230, Multimedia Separation Module (MSM) 240, and Audio Fragment Management Module (FMM) 250.

FCM 220 manages the connection between the RTT fax print server 100 and fax machine 150. It may be initialized with one network address for the fax machine 150, but it may be informed of the appropriate fax machine network address by user input or network management programming. FCM 220 activates, maintains, and deactivates connections with one or more fax devices. One of the primary purposes of FCM 220 is to stop the activated fax device from "timing out". In normal usage, a fax device receives a continuous stream of data, and, when there is prolonged delay, the fax device considers the communication concluded and times out. For example, in the International Telecommunications Union (ITU) T.30 protocol, the delay tolerance is 3 seconds \pm 15%, or 2.55 to 3.45 seconds, meaning that the connection will be terminated on the fax machine side if no data is received for that period of time. However, when a conversation is being transcribed, there may be long pauses between sentences, or there might be a pause as the transcription software or stenographer catches up, which would result in the fax machine timing out.

There are various means to prevent this timing out without necessarily altering the transmission protocol, and one such means is described in U.S. Patent 5,790,641 to Chan et al. (hereinafter, the '641 patent), which is hereby incorporated by reference. The '641 patent solves the time out problem by generating and transmitting delay signals to the connected fax, thus reinitializing the internal time-out counter and forestalling the time out. These delay signals are transmitted repeatedly to maintain the connection and can be used with any transmission protocol, without modifying the transmission protocol. In the

preferred embodiment, the different delay tolerances of various transmission protocols are stored in FCM 220 and are automatically selected depending on the connected fax device. The FCM 220 deactivates the connection based on signals from the transcription service, such as when a stenographer presses a certain button indicating that transcription
5 has ceased.

Multimedia Integration Module 230 provides the ability to integrate images or graphics into the transcription data being transmitted to the fax machine. In other words, these images or graphics are translated into a format readable by fax machine 150. Using
10 these means, input in the form of stills from camera 135, computer-stored images, or graphics accompanying an a/v presentation could be output on fax machine 150. The MIM 230 will be described in greater detail below, with reference to FIG. 3.

Multimedia Synchronization Module 240 takes a combined multimedia signal
15 input, separates out the different types of data, such as transcribed text, audio signals, or video signals, for separate output devices, and synchronizes the separate outputs. In other words, the MSM 240 is used when the multimedia output is being sent to more than one peripheral device, whereas MIM 230 is used when the multimedia output is all going to fax machine 150 (or a fax program on a computer).

20 For example, if a videoconference was taking place where there is video input through camera 135, audio input through microphone 130, both of which are used to

create a MPEG (Moving Pictures Engineering Group) signal by computer 139, and the computer 139 is also creating a transcribed text, this combined videoconference multimedia signal would be output on network 101. The MSM 240 would receive this signal, separate out its components, synchronize the components, and send them to computer 169 and fax machine 150. Thus, a user at computer 169 would see video output on screen 169a, audio output through speakers 160, and transcribed text printing out on fax machine 150. In other embodiments, the MSM 240 can be left out of the RTT fax print server 100 in order to conserve space. For instance, if the RTT fax print server was implemented in a PDA, which has a limited memory capacity, the MSM 240 may be omitted so that the PDA only has the ability to print transcribed speech to a fax machine or fax program. The MSM 240 will be described in greater detail below, with reference to FIG. 4.

Audio Fragment Management Module (FMM) 250 keeps data in a buffer in order to manage the fragments (or phrases) of conversation being transcribed. Since most fax devices use single page printers, the preferred embodiment of the present invention breaks transcribed text up into fragments in order to ensure that completed fragments appear on a single page, rather than spread across two pages, which may be confusing. In addition, the FMM 250 ensures that the output is more intuitive, and understandable to the reader. The granularity of the fragments may be set by the user or automatically. The granularity may be small, such as a word, or large, such as whole sentences. Thus, if the fragment granularity was set to a word, the FMM 250 would store a formed word in the

buffer, determine if there was enough room to fit the word on the current page being printed on fax machine 150, and either form feed the current page if the word was too large, or print it on the current page if there was room. Similarly, with granularity set to a sentence, the FMM 250 would store a formed sentence, determine if there was room, and
5 form feed or print to the current page based on the sentence size and the amount of room left on the current page.

If a phrase were the chosen fragment granularity, the FMM 250 would break up sentences where a punctuation mark was expected, and keep those sections, or phrases,
10 intact when printing. This may be done, for example, by using the pauses in spoken speech, as described in "Speech Recognition with Automatic Punctuation", C. J. Chen, Proceedings of EuroSpeech 99, 1:447-450. Other methods of defining fragments use language models, Natural Language Understanding (NLU), etc.

15 Control Module 260 stores control information and parameters for the operation of the RTT fax print server 100. Control information includes input and output parameters and is further described in connection with FIG. 6 below. The Control Module 260 retains information concerning peripheral devices attached to network 101. This peripheral device information may be collected by Control Module 260
20 automatically, by some sort of ping plug'n'play function, or may be input by a user. Control Module 260 determines whether incoming signals should be directed towards MIM 230 or MSM 240 based on user specifications.

Although FIG. 2 shows a shared bus 205 for communication between the modules, this is only an abstraction, as the modules may be programs running on the same processor, or hardware with dedicated communication lines.

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FIG. 3 shows the details of MIM 230. When the MIM 230 is used, both video and transcribed text is output to fax machine 150. The video may be any format, whether still pictures, drawings, moving pictures, etc. If the video is in the form of a continuous moving picture, which the fax machine cannot print, the input video signal is sent to Continuous-to-Discrete Translator 310. The C/D translator either selects or creates still images from the incoming continuous video stream using criteria selected either by the user or by the RTT fax print server 100 itself. For example, the time interval between “snapshots” should be chosen, as well as the resolution of the image, and the size of the image to be printed on the fax machine (e.g., 2 x 2 inches). In addition, other options may be available to the user, such as a cropping ability, where the user chooses one section of the incoming video signal to print, and the rest of the video data is ignored.

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An image buffer 320 stores the next image to be printed on the fax machine. The image consists of either a still from the C/D translator 310 or an image directly input in the incoming data stream. If directly input, the image buffer 320 may have to partially reconstruct the image as it is buffering it. The image buffer 320 awaits directions from

20

an Interleaver 330 before sending the buffered image to fax machine 150 through I/O module 210.

The Interleaver 330 interleaves the images between the transcribed text in the fax machine printed output. The Interleaver 330 may rely on instructions from the user or an external program for appropriate placement of images, or may provide its own algorithm for splitting up the text, based on the nature of the incoming signal. For example, the user may want an image of the speaker to print out after every seventh line of transcribed text. Or an external program might indicate to Interleaver 330 that a particular diagram should be placed in the fax printout after a particular word in the transcribed text. This could happen in the instance that a speaker is showing slides during a presentation. Or the Interleaver (or Control Module 260) may determine whether to insert an image based on the size of the fragments to be printed and the lacunae in the speech or conversation being transcribed.

The Interleaver 330 works closely with FMM 250 to properly interleave the image between the lines or fragments of text. In the case where the C/D Translator 310 is taking snapshots of an incoming video stream, the image buffer stores a time index associated with the captured still image. Similarly, the FMM 250 would maintain a time index associated with each fragment. The Interleaver 330 would use these two time indices to determine where to place the image in the fax output.

FIG. 4 shows the details of MSM 240. First, the combined incoming signal is segregated into its various data types by Signal Separator 410. Data segregation can be performed by many different methods, and many of the old and new methods are described in U.S. Patent Application Serial No. 09/137,966, the contents of which are hereby incorporated by reference. Synchronizer 420 is responsible for aligning the a/v presentation on the various peripheral devices. If the audio and video data are already time-aligned by the multimedia software resident in computer 139, the Synchronizer 420 receives both data signals and temporarily buffers them. The time index of the transcribed text being buffered in fragment form is communicated from FMM 250. Because the stenographer or transcription program may introduce a delay between the a/v signal and the transcribed text, the Synchronizer 420 buffers the a/v signals until the transcribed text is more closely synchronized with the a/v signals and then outputs the a/v signals. This synchronization delay time is either automatically set by Control Module 260 or set by the user.

On the other hand, if the user is engaged in a videoconference, the user may wish to keep the a/v signals in real-time so that he or she may interject or respond in a timely manner. In this case, the Synchronizer 420 will not buffer the a/v signals, and there will be a resulting delay in the transcribed text being output on fax machine 150.

The Synchronizer 420 is also capable of synchronizing output to several different printers or fax machines. In this case, the stenographer or stenographic program would

have the ability to add labels to the transcribed text in order to classify different portions of the text. For example, the transcribed text might be labelled by level of importance, with the most important text being output to a particular printer or fax machine, and the remaining text being output to other printers or fax machines.

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FIG. 5 shows another function that must be performed by FMM 250. Because fax machines have different directions of output, the buffering of fragments may have a more drastic effect on the printed transcription, which makes the text difficult to read. As an example of an difficult-to-read transcription, fax machine 510 in FIG. 5 prints out from the bottom of the page, thus first sentence 515 ("This direction requires attention.") appears after second sentence 517 ("A buffer for transcribed data is needed."). Because the sentences are chopped up awkwardly, and the sequence is bottom-to-top, rather than top-to-bottom, reading the transcribed text is counter-intuitive. However, if the FMM 250 stores the transcribed text in a buffer, and then outputs comprehensible fragments before starting a new line. For example, fax machine 550 in FIG. 5 also prints its output from the bottom of the page, but FMM 250 controls the output so that first sentence 555 ("This direction requires attention") and second sentence 557 ("A buffer for this transcribed data is needed") appear in more easily understandable portions.

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In addition, if the stenographer or stenographic program has the labeling capability discussed above, the FMM 250 may also alter the appearance of certain text or the speed of printing. For instance, if the stenographer or stenographic program labels

something to indicate it was said with particular emphasis, the FMM 250 may print that labeled material in a larger font, or in bold, etc. Furthermore, the labels inserted by the stenographer or stenographic program might also indicate to print a particular phrase or fragment more quickly in order that the immediacy of highly relevant parts of the conversation is not lost. This might be done by increasing the font size, thereby causing the lines printed per minute to rise.

Lastly, the FMM 250 is also used to overcome limitations of particular printers or fax machines. For example, in some fax machines, there is a certain amount of time and distance before printed text becomes visible. This would introduce a time lag in following the conversation. To fix this problem, in the preferred embodiment of the present invention, the FMM 250 would add several returns after each printed fragment, so that the printed fragment becomes immediately visible.

FIG. 6 shows an input dialog box for a user to input control information and parameters for the Control Module 260 to control the RTT fax print server 100. Input 610 allows the user to select the number and location of the peripheral devices providing the input to RTT fax print server 100. Text 620 is for the user to select where the transcribed text will be output, either a fax machine or a printer, and the location of the output device. The output device could also be the port of a computer, where a computer fax program will take the input. Video 630 has three choices: fax machine, monitor, and other. If fax machine is selected, option box 635 would need to be filled out by the user

as well. Option box 635 includes an entry box for the size of the image to be printed on the output page, and a interval time setting for snapshots of a continuous stream moving picture display. If monitor is selected and the input video is detected as continuous, the user will have to fill in option box 637. Namely, the user will have to indicate whether the transcribed text will be synchronized with the video or not. If the video is to be transcribed, the user needs to indicate the amount of time the continuous video signal stream will be delayed, or let the program determine a flexible time delay.

Audio 640 has three choices: computer speakers, speaker system, and other. The computer speakers box is selected when a computer system is being used, such as speakers 160 attached to computer 169 in FIG. 1. The speaker system box is chosen when there is a separate audio facility, which is not necessarily connected to a computer system, available on the network. In the preferred embodiment, the locations of output devices are not entered in dialog box 600. This is either because the information is entered in a dialog box that appears after dialog 600, or because the user has previously installed default values that are retained by Control Module 260.

The preferred embodiment described above is for a real-time transcription to a fax machine. In other embodiments, a multimedia presentation might be recorded on a computer-readable medium, and be played back through the RTT fax print server 100 as a continuous stream. In addition, the RTT fax print server 100 may not output transcribed text or video images to the fax machine, but other types of printed text. For

instance, during an a/v presentation concerning taxes, a sample tax form could print out on the fax machine so that the viewer may look at it and fill it out during the presentation. Or during an engineering a/v presentation, a detailed architectural diagram could print out for the user to look at and write on. Lastly, although the RTT fax print server 100 is
5 directed towards printing on a fax machine, it could also be used for providing the same printing capabilities on a printer.

As was noted in the beginning of the Detailed Description, although it is termed a “real time transcription fax print server” in reference to the preferred embodiment, the
10 print server according to the present invention does not necessarily translate “transcriptions”, but may deal with graphics, images and the like, as has been described above. Furthermore, the print server according to the present invention does not necessarily output to a “fax”, but may output to a printer, or to fax emulation software running on a processor. Lastly, the print server according to the present invention does
15 not necessarily have “real time” input, but may take input from a storage means.

While the present invention has been described with respect to a certain preferred embodiment, it should be understood that the invention is not limited to these particular embodiments, but, on the contrary, the invention is intended to cover all modifications,
20 equivalents, and alternatives falling within the spirit and scope of the invention as defined by the appended claims.

WHAT IS CLAIMED IS:

1. A system for providing a printing capability for a transcription service,
comprising:

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a printing means;

a transcription service for producing transcribed text; and

a real time transcription (RTT) print server;

wherein said RTT print server receives transcribed text output from said

transcription service and translates it into a format compatible with said

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printing means.

2. The system as recited in claim 1, wherein the printing means comprises a fax
machine.

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3. The system as recited in claim 1, wherein the printing means comprises a
printer.

4. The system as recited in claim 1, wherein the printing means comprises a telex
machine.

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5. The system as recited in claim 1, wherein the transcription service comprises:
a stenograph writer; and

a processor for implementing a program which translates data input from the stenograph writer into transcribed text.

6. The system as recited in claim 1, wherein the transcription service comprises:

a microphone; and

an Automatic Speech Recognition (ASR) program running on a processor connected to said microphone.

7. The system as recited in claim 1, wherein the RTT print server comprises:

an Input/Output (I/O) communication module for providing an interface with the transcription service and the printing means;

a Fax Connection Module for maintaining an active connection with the printing means;

an Audio Fragment Management Module (FMM) for buffering transcribed text into fragments and sending said fragments to be printed on the printing means; and

a Control Module for controlling the real time transcription process, for directing signals in the RTT print server, for storing user preferences, and for storing information about at least one printing means.

8. The system as recited in claim 7, wherein the RTT print server further comprises:

a Multimedia Integration Module (MIM) for integrating video, images, or
graphics into transcribed text output on the printing means.

9. The system as recited in claim 7, wherein the real time transcription server
further comprises:

a Multimedia Synchronization Module (MSM) for synchronizing multimedia
signals with transcribed text output on the printing means.

10. The system as recited in claim 1, further comprising:

a network;

a connection between the printing means and the network;

a processor running the transcription service; and

a processor running the RTT print server.

11. The system as recited in claim 7, wherein the printing means is a fax machine,
and the Fax Communication Module maintains an active communication link by
sending delay frames to the fax machine.

12. The system as recited in claim 8, wherein the MIM comprises:

a Continuous-to-Discrete (C/D) Translator for receiving a continuously
streaming video signal, for creating still images based on C/D Translator
criteria, and for outputting said still images to an Image Buffer;

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the Image Buffer for receiving still images, graphics, or diagrams, for storing
said still images, graphics, or diagrams, and for outputting said still
images, graphics, or diagrams to the printing means when an Interleaver
directs it to do so; and

5 the Interleaver for interleaving still images, graphics, or diagrams between
transcribed text on the printing means by directing the Image Buffer when
to send still images, graphics, or diagrams to the printing means and by
receiving transmission information from the FMM;

10 wherein said C/D Translator criteria comprises at least one of a time interval
between snapshots, a location to crop a smaller still image inside a video
image, a resolution for the still image, and a printed size for the still image
on output from the printing means.

13. The system as recited in claim 9, wherein the MSM comprises:

15 a Signal Separator for separating out an audio and a video signal from a
multimedia input signal; and

a Synchronizer for receiving said separated audio and video signals, for time-
aligning, if necessary, said separated audio and video signals, and for
synchronizing said separated audio and video signals with transcribed text
20 output from the FMM.

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14. The system as recited in claim 7, wherein the granularity of fragments buffered by the FMM is adjustable, and ranges from words to complete sentences; and further wherein the FMM keeps each fragment whole on a single page.

5 15. The system as recited in claim 1, wherein the transcription service is part of a multimedia presentation, further comprising:

at least one display means for displaying a video signal from the multimedia presentation; and

10 at least one speaker for playing an audio signal of the multimedia presentation;

wherein the at least one display means comprises at least one of a computer monitor, a television screen, a Personal Digital Assistant (PDA) display, and a display in an embedded device.

15 16. The system as recited in claim 1, further comprising:

a processor for running the transcription service and the RTT print server, said processor being in a Personal Digital Assistant (PDA); and
a communication link between said PDA and the printing means.

20 17. The system as recited in claim 7, wherein the Control Module has a Graphical User Interface (GUI) module which provides a graphical interface on a display,

wherein the GUI allows a user to input control parameters and preferences concerning real-time transcription.

18. A system for providing a printing capability for a multimedia presentation,
comprising:

a printing means;

at least one display means for displaying a video signal from the multimedia presentation;

at least one speaker for playing an audio signal of the multimedia presentation; and

a real time multimedia (RTM) print server;

wherein said RTM print server receives data output from said multimedia presentation and translates it into a format compatible with said printing means.

19. The system as recited in claim 18, wherein the multimedia presentation is played back from a computer-readable medium.

20. The system as recited in claim 18, wherein the multimedia presentation is broadcast in real time.

21. The system as recited in claim 18, wherein the RTM print server comprises:

an Input/Output (I/O) communication module for providing an interface with

the multimedia presentation and the printing means;

a Fax Connection Module for maintaining an active connection with the

printing means;

5 a Multimedia Integration Module (MIM) for integrating video, images, or
graphics into output on the printing means;

a Multimedia Synchronization Module (MSM) for synchronizing multimedia
signals with output on the printing means; and

10 a Control Module for controlling a printing process, for directing signals to
either the MSM or MIM, for storing user preferences, and for storing
information about at least one printing means.

22. The system as recited in claim 21, wherein a transcription service for producing
transcribed text is provided with the multimedia presentation, the RTM print
15 server further comprising:

an Audio Fragment Management Module (FMM) for buffering transcribed
text into fragments and sending said fragments to be printed on the
printing means;

20 wherein said MIM integrates transcribed text into output on the printing
means; and

wherein said MSM synchronizes transcribed text which is output on the
printing means with other signals.

23. The system as recited in claim 21, wherein the printing means is a fax machine,
and the Fax Communication Module maintains an active communication link by
sending delay frames to the fax machine.

5

24. The system as recited in claim 22, wherein the MIM comprises:

a Continuous-to-Discrete (C/D) Translator for receiving a continuously
streaming video signal, for creating still images based on C/D Translator
criteria, and for outputting said still images to an Image Buffer;

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the Image Buffer for receiving still images, graphics, or diagrams, for storing
said still images, graphics, or diagrams, and for outputting said still
images, graphics, or diagrams to the printing means when an Interleaver
directs it to do so; and

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the Interleaver for interleaving still images, graphics, or diagrams between
transcribed text on the printing means by directing the Image Buffer when
to send still images, graphics, or diagrams to the printing means and by
receiving transmission information from the FMM;

wherein said C/D Translator criteria comprises at least one of a time interval
between snapshots, a location to crop a smaller still image inside a video
image, a resolution for the still image, and a printed size for the still image
on output from the printing means.

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25. The system as recited in claim 22, wherein the MSM comprises:

a Signal Separator for separating out an audio and a video signal from a multimedia input signal; and

a Synchronizer for receiving said separated audio and video signals, for time-aligning, if necessary, said separated audio and video signals, and for synchronizing said separated audio and video signals with transcribed text output from the FMM.

26. The system as recited in claim 22, wherein the granularity of fragments buffered

by the FMM is adjustable, and ranges from words to complete sentences; and further wherein the FMM keeps each fragment whole on a single page.

27. The system as recited in claim 18, wherein the at least one display means

comprises at least one of a computer monitor, a television screen, a Personal Digital Assistant (PDA) display, and a display in an embedded device.

28. The system as recited in claim 18, wherein the output from said multimedia

presentation, which is translated by the RTM print server into a format compatible with said printing means, comprises at least one of:

an image, graphic, or diagram accompanying the multimedia presentation;

a form to be filled out by a user in concert with the multimedia presentation;

a test to be taken by a user in concert with the multimedia presentation; and

material on which a user is to make notations in concert with the multimedia presentation.

29. The system as recited in claim 21, wherein the Control Module has a Graphical User Interface (GUI) module which provides a graphical interface on a display, wherein the GUI allows a user to input control parameters and preferences concerning real-time transcription.

30. A method for providing a printing capability for a real time transcription service, comprising the steps of:

- receiving information concerning at least one printing means;
- receiving a user's instructions and parameters concerning a real-time transcription;
- receiving transcribed text from a transcription service;
- translating the transcribed text into a format compatible with the at least one printing means; and
- maintaining an active connection with the at least one printing means.

31. The method as recited in claim 30, wherein the translating step comprises the sub-step of:

- integrating video, images, or graphics into transcribed text output on the at least one printing means.

32. The method as recited in claim 30, wherein the translating step comprises the sub-step of:

synchronizing multimedia signals with transcribed text output on the at least one printing means.

33. The method as recited in claim 30, wherein the maintaining an active connection with the at least one printing means step comprises the sub-step of: maintaining an active communication link by sending delay frames to the at least one printing means.

34. The method as recited in claim 31, wherein the integrating sub-step comprises the steps of:

receiving a continuously streaming video signal;

creating still images from the continuously streaming video signal based on still image criteria;

outputting said still images to an Image Buffer;

storing still images, graphics, or diagrams in an Image Buffer;

interleaving stored still images, graphics, or diagrams between transcribed text as output on the at least one printing means;

wherein said still image criteria comprises at least one of a time interval

between still images, a location to crop a smaller still image inside a video

image, a resolution for the still image, and a printed size for the still image
in output from the printing means.

35. The method as recited in claim 32, wherein the synchronizing sub-step
comprises the steps of:

separating out an audio and a video signal from a multimedia input signal;
time-aligning, if necessary, said separated audio and video signals; and
synchronizing said separated audio and video signals with transcribed text
output from the at least one printing means.

36. The method as recited in claim 30, wherein the translating step comprises the
sub-step of:

buffering transcribed text into fragments; and
sending said fragments to be printed on the at least one printing means.

37. The method as recited in claim 36, wherein the granularity of fragments in the
buffering sub-step is adjustable, and ranges from words to complete sentences,
the buffering sub-step comprising the sub-sub-step of:
keeping each fragment whole on a single page.

38. The method as recited in claim 30, further comprising the steps of:

displaying a video signal from a multimedia presentation on at least one
displaying means; and
playing an audio signal of the multimedia presentation on at least one speaker;
wherein the transcription is part of said multimedia presentation; and
5 wherein the at least one displaying means comprises at least one of a
computer monitor, a television screen, a Personal Digital Assistant (PDA)
display, and a display in an embedded device.

39. The method as recited in claim 30, further comprising the step of:

10 providing a Graphical User Interface (GUI) on a display, said GUI allowing a
user to input control parameters and preferences concerning real-time
transcription.

40. A method for providing a printing capability for a multimedia presentation,
15 comprising the steps of:

receiving information concerning at least one printing means;
receiving a user's instructions and parameters concerning a multimedia
presentation;

receiving output from the multimedia presentation;

20 translating the output into a format compatible with the at least one printing
means; and

maintaining an active connection with the at least one printing means.

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41. The method as recited in claim 40, wherein the multimedia presentation is broadcast in real time.

5 42. The method as recited in claim 40, wherein the multimedia presentation is played back from a computer-readable medium.

43. The method as recited in claim 40, wherein the translating step comprises the sub-step of:
10 integrating video, images, or graphics into with transcribed text output from a transcription service on the at least one printing means.

44. The method as recited in claim 40, wherein the translating step comprising the sub-step of:
15 synchronizing multimedia signals with the multimedia output on the at least one printing means.

45. The method as recited in claim 40, wherein the maintaining an active connection with the at least one printing means step comprises the sub-step of:
20 maintaining an active communication link by sending delay frames to the at least one printing means.

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46. The method as recited in claim 43, wherein the integrating sub-step comprises the steps of:

receiving a continuously streaming video signal;

creating still images from the continuously streaming video signal based on

5 still image criteria;

outputting said still images to an Image Buffer;

storing still images, graphics, or diagrams in an Image Buffer;

interleaving stored still images, graphics, or diagrams between transcribed text

as output on the at least one printing means;

10 wherein said still image criteria comprises at least one of a time interval

between still images, a location to crop a smaller still image inside a video

image, a resolution for the still image, and a printed size for the still image

in output from the printing means.

15 47. The method as recited in claim 44, wherein the synchronizing sub-step

comprises the steps of:

separating out an audio and a video signal from a multimedia input signal;

time-aligning, if necessary, said separated audio and video signals; and

synchronizing said separated audio and video signals with transcribed text in

20 output from the at least one printing means.

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48. The method as recited in claim 43, wherein a transcription service is provided with the multimedia presentation, the method further comprising the steps of:
buffering transcribed text into fragments; and
sending said fragments to be printed on the at least one printing means;
5 wherein said integrating step integrates transcribed text into output on the printing means.
49. The method as recited in claim 44, wherein a transcription service is provided with the multimedia presentation, the method further comprising the steps of:
10 buffering transcribed text into fragments; and
sending said fragments to be printed on the at least one printing means;
wherein said synchronizing step synchronizes transcribed text with output on the printing means.
50. The method as recited in claim 40, further comprising the steps of:
15 displaying a video signal from a multimedia presentation on at least one displaying means; and
playing an audio signal of the multimedia presentation on at least one speaker;
wherein the transcription is part of said multimedia presentation; and
20 wherein the at least one displaying means comprises at least one of a computer monitor, a television screen, a Personal Digital Assistant (PDA) display, and a display in an embedded device.

51. The method as recited in claim 40, wherein the output from said multimedia presentation, which is translated into a form that is compatible with said printing means, comprises at least one of:

an image, graphic, or diagram accompanying the multimedia presentation;
a form to be filled out by a user in concert with the multimedia presentation;
a test to be taken by a user in concert with the multimedia presentation; and
material on which a user is to make notations in concert with the multimedia presentation.

52. The method as recited in claim 40, further comprising the step of:

providing a Graphical User Interface (GUI) on a display, said GUI allowing a user to input control parameters and preferences concerning the multimedia presentation.

53. A computer system for providing a printing capability for a real time transcription service, the computer system comprising:

at least one computer-readable medium including:

code that receives information concerning at least one printing means;

code that receives a user's instructions and parameters concerning a real-time transcription;

code that receives transcribed text from a transcription service;

code that translates the transcribed text into a format compatible with the
at least one printing means; and
code that maintains an active connection with the at least one printing
means.

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54. The computer system as recited in claim 53, wherein the code that translates the
transcribed text into a format compatible with the at least one printing means
comprises:

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code that integrates video, images, or graphics into transcribed text output on
the at least one printing means;
code that buffers transcribed text into fragments; and
code that sends said fragments to be printed to the at least one printing means.

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55. The computer system as recited in claim 53, wherein the code that translates the
transcribed text into a format compatible with the at least one printing means
comprises:

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code that synchronizes multimedia signals with transcribed text output on the
at least one printing means;
code that buffers transcribed text into fragments; and
code that sends said fragments to be printed to the at least one printing means.

56. The computer system as recited in claim 53, wherein the code that maintains an active connection with the at least one printing means comprises:

code that maintains an active communication link by sending delay frames to the at least one printing means.

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57. The computer system as recited in claim 54, wherein the code that integrates video, images, or graphics into transcribed text output on the at least one printing means comprises:

code that receives a continuously streaming video signal;

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code that creates still images from the continuously streaming video signal based on still image criteria;

code that outputs said still images to an Image Buffer;

code that stores still images, graphics, or diagrams in an Image Buffer;

code that interleaves stored still images, graphics, or diagrams between transcribed text as output on the at least one printing means;

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wherein said still image criteria comprises at least one of a time interval

between still images, a location to crop a smaller still image inside a video image, a resolution for the still image, and a printed size for the still image as output from the printing means.

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58. The computer system as recited in claim 55, wherein the code that synchronizes multimedia signals with transcribed text output on the at least one printing means comprises:

code that separates out an audio and a video signal from a multimedia input signal;

code that time-aligns, if necessary, said separated audio and video signals; and
code that synchronizes said separated audio and video signals with transcribed text output from the at least one printing means.

59. The computer system as recited in claim 53, wherein the code that translates the transcribed text into a format compatible with the at least one printing means comprises:

code that buffers transcribed text into fragments;

code that keeps each fragment whole on a single page; and

code that sends said fragments to be printed to the at least one printing means; wherein the granularity of fragments in the code that buffers is adjustable, and

ranges from words to complete sentences.

60. The computer system as recited in claim 53, further comprising:

at least one computer-readable medium including:

code that displays a video signal from a multimedia presentation on at least one display means;

code that plays an audio signal of the multimedia presentation on at least

one speaker;

wherein the transcription is part of said multimedia presentation; and

wherein the at least one display means comprises at least one of a

5 computer monitor, a television screen, a Personal Digital Assistant
(PDA) display, and a display in an embedded device.

61. The computer system as recited in claim 53, wherein all the code is run on a
Personal Digital Assistant (PDA).

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62. The computer system as recited in claim 53, wherein the at least one computer-
readable medium further includes:

code that provides a Graphical User Interface (GUI) on a display, said

GUI allowing a user to input control parameters and preferences

15

concerning real-time transcription.

63. A computer system for providing a printing capability for a multimedia
presentation, the computer system comprising:

at least one computer-readable medium including:

20

code that receives information concerning at least one printing means;

code that receives a user's instructions and parameters concerning a
multimedia presentation;

code that receives output from the multimedia presentation;
code that translates the output into a format compatible with the at least
one printing means; and
code that maintains an active connection with the at least one printing
means.

64. The computer system as recited in claim 63, wherein the multimedia
presentation is broadcast in real time.

65. The computer system as recited in claim 63, wherein the multimedia
presentation is played back from at least one computer-readable medium.

66. The computer system as recited in claim 63, wherein the code that translates
comprises:

code that integrates video, images, or graphics into the multimedia output on
the at least one printing means.

67. The computer system as recited in claim 63, wherein the code that translates
comprises:

code that synchronizes multimedia signals with the multimedia output on the
at least one printing means.

68. The computer system as recited in claim 63, wherein the code that maintains an active connection with the at least one printing means step comprises:
code that maintains an active communication link by sending delay frames to the at least one printing means.

5

69. The computer system as recited in claim 66, wherein the code that integrates comprises:

code that receives a continuously streaming video signal;
code that creates still images from the continuously streaming video signal based on still image criteria;

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code that outputs said still images to an Image Buffer;
code that stores still images, graphics, or diagrams in an Image Buffer;
code that interleaves stored still images, graphics, or diagrams between transcribed text as output on the at least one printing means;

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wherein said still image criteria comprises at least one of a time interval between still images, a location to crop a smaller still image inside a video image, a resolution for the still image, and a printed size for the still image in output from the printing means.

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70. The computer system as recited in claim 67, wherein the code that synchronizes comprises:

code that separates out an audio and a video signal from a multimedia input
signal;

code that time-aligns, if necessary, said separated audio and video signals; and

code that synchronizes said separated audio and video signals with transcribed

5 text in output from the at least one printing means.

71. The computer system as recited in claim 63, wherein a transcription service is
provided with the multimedia presentation, further comprising:

at least one computer-readable medium including:

10 code that buffers transcribed text into fragments;

code that sends said fragments to be printed on the at least one printing
means; and

code that receives a user's instructions and parameters concerning a
multimedia presentation;

15 wherein said integrating code integrates transcribed text into output on
the printing means.

72. The computer system as recited in claim 63, wherein a transcription service is
provided with the multimedia presentation, further comprising:

20 at least one computer-readable medium including:

code that buffers transcribed text into fragments;

code that sends said fragments to be printed on the at least one printing means; and

code that receives a user's instructions and parameters concerning a multimedia presentation;

5 wherein said synchronizing code synchronizes transcribed text with output on the printing means.

73. The computer system as recited in claim 63, further comprising:

10 at least one computer-readable medium including:

code that displays a video signal from a multimedia presentation on at least one display means; and

code that plays an audio signal of the multimedia presentation on at least one speaker;

15 wherein the at least one display means comprises at least one of a computer monitor, a television screen, a Personal Digital Assistant (PDA) display, and a display in an embedded device.

74. The computer system as recited in claim 63, wherein the output from said

20 multimedia presentation, which is translated into a form compatible with said printing means, comprises at least one of:

an image, graphic, or diagram accompanying the multimedia presentation;

a form to be filled out by a user in concert with the multimedia presentation;
a test to be taken by a user in concert with the multimedia presentation; and
material on which a user is to make notations in concert with the multimedia
presentation.

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75. The computer system as recited in claim 63, further comprising:

at least one computer-readable medium including:

code that provides a Graphical User Interface (GUI) on a display, said
GUI allowing a user to input control parameters and preferences
concerning the multimedia presentation.

10

76. A system for providing a presentation capability for a transcription service,
comprising:

a processor running fax emulation software;
a display means operatively connected to said processor;
a transcription service for producing transcribed text; and
a real time transcription (RTT) presentation server;

wherein said RTT presentation server receives transcribed text output from
said transcription service and translates it into a format compatible with
said fax emulation software.

15

20

77. A system for providing a presentation capability for a multimedia presentation, comprising:

a processor running fax software;

a display means operatively to said processor;

5 at least one display means for displaying a video signal from the multimedia presentation;

at least one speaker for playing an audio signal of the multimedia presentation; and

a real time multimedia (RTM) presentation server;

10 wherein said RTM presentation server receives data output from said multimedia presentation and translates it into a format compatible with said fax emulation software.

78. A method for providing a presentation capability for a real time transcription service, comprising the steps of:

running fax emulation software on a processor;

receiving information concerning a display means, said display means operatively connected to said processor;

receiving a user's instructions and parameters concerning a real-time transcription;

20 receiving transcribed text from a transcription service;

translating the transcribed text into a format compatible with the fax
emulation software; and
maintaining an active connection with the fax emulation software.

5 79. A method for providing a presentation capability for a multimedia presentation,
comprising the steps of:

running fax emulation software on a processor;

receiving information concerning a display means, said display means
operatively connected to said processor;

10 receiving a user's instructions and parameters concerning a multimedia
presentation;

receiving output from the multimedia presentation;

translating the output into a format compatible with the fax emulation
software; and

15 maintaining an active connection with the fax emulation software.

80. A computer system for providing a presentation capability for a real time
transcription service, the computer system comprising:

at least one computer-readable medium including:

20 code that emulates a fax machine, said emulation including code that
displays received fax data on a display means;

code that receives information concerning said display means;

code that receives a user's instructions and parameters concerning a real-time transcription;

code that receives transcribed text from a transcription service;

code that translates the transcribed text into a format compatible with the

5 code that emulates a fax machine; and

code that maintains an active connection with the code that emulates a fax machine.

81. A computer system for providing a presentation capability for a multimedia presentation, the computer system comprising:

at least one computer-readable medium including:

code that emulates a fax machine, said emulation including code that displays received fax data on a display means;

code that receives information concerning said display means;

15 code that receives a user's instructions and parameters concerning a multimedia presentation;

code that receives output from the multimedia presentation;

code that translates the output into a format compatible with the code that emulates a fax machine; and

20 code that maintains an active connection with the code that emulates a fax machine.

82. The system as recited in claim 9, further comprising:

at least one other printing means;

wherein the MSM synchronizes transcribed text to be output on the printing means and the at least one other printing means.

5

83. The system as recited in claim 21, further comprising:

at least one other printing means;

wherein the MSM synchronizes transcribed text to be output on the printing means and the at least one other printing means.

10

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ABSTRACT

5 A system and method for providing a printing capability using peripheral or stand-alone devices are disclosed. In the system and method, portions of a multimedia presentation, transcribed text, or both are output to a printing device. In the preferred embodiment, transcribed text is output to a fax machine by means of a Real Time Transcription Fax Server, which can also interleave other material into the fax output, and/or synchronize the fax output with other devices, such as monitors and speakers.

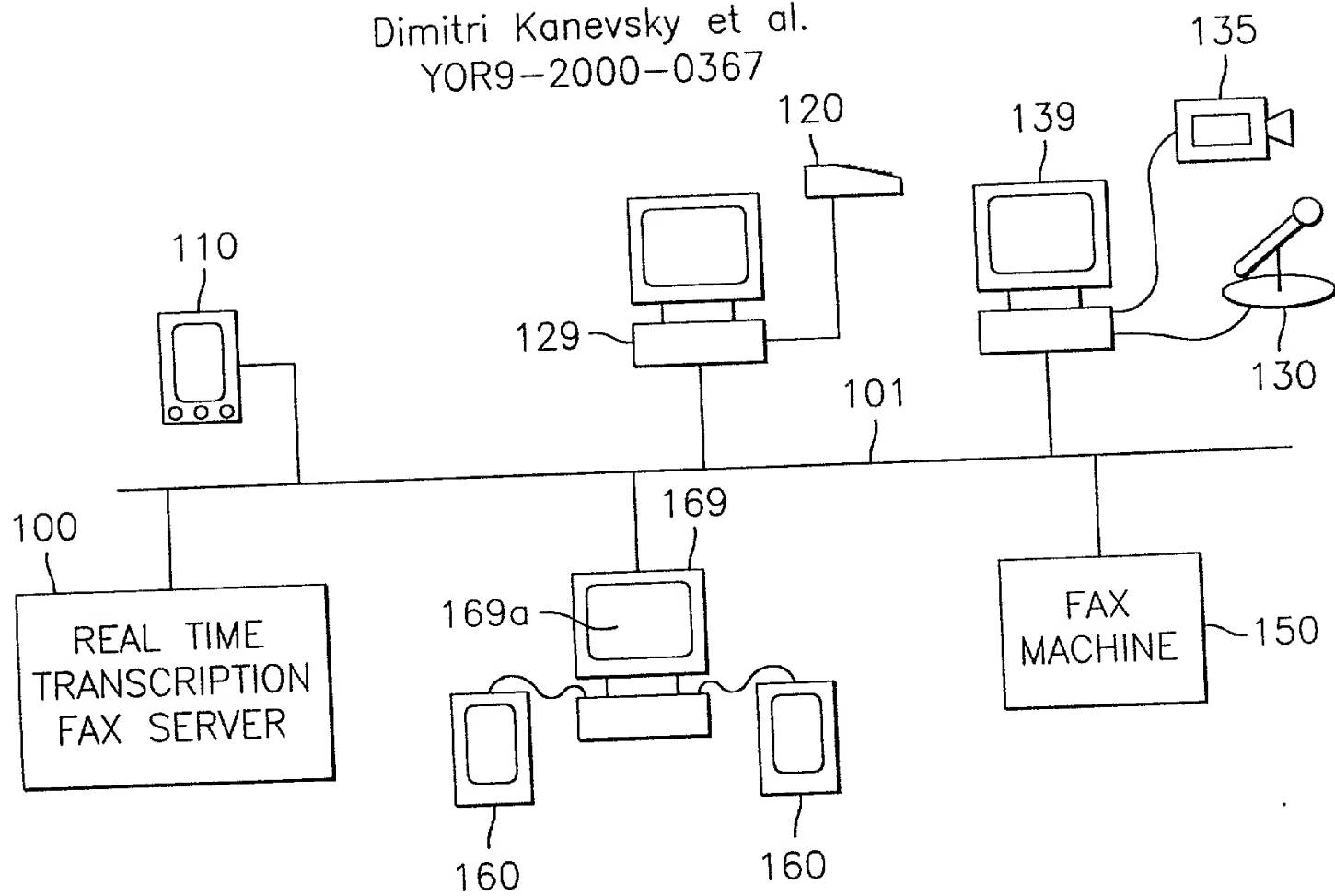


FIG. 1

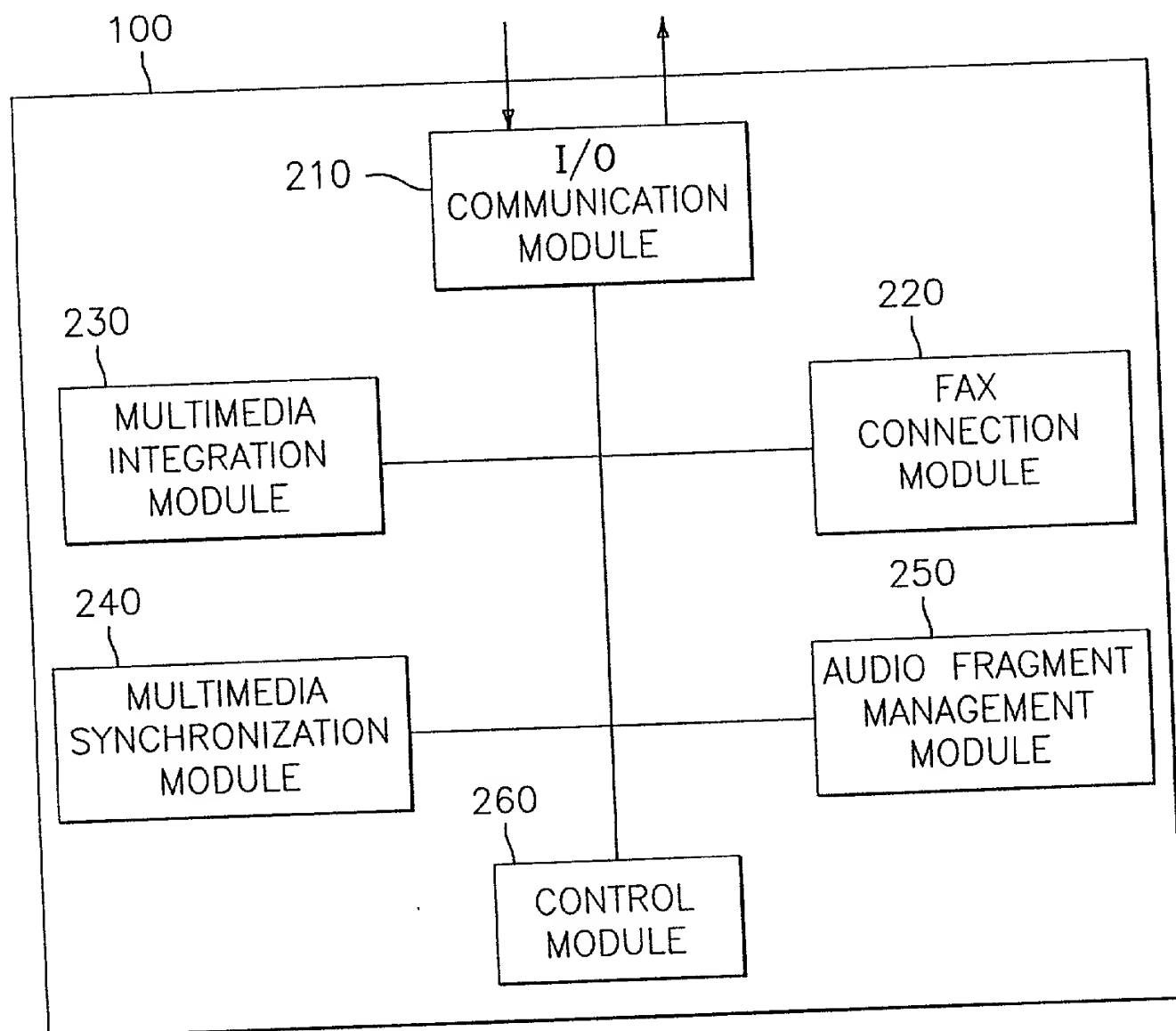


FIG. 2

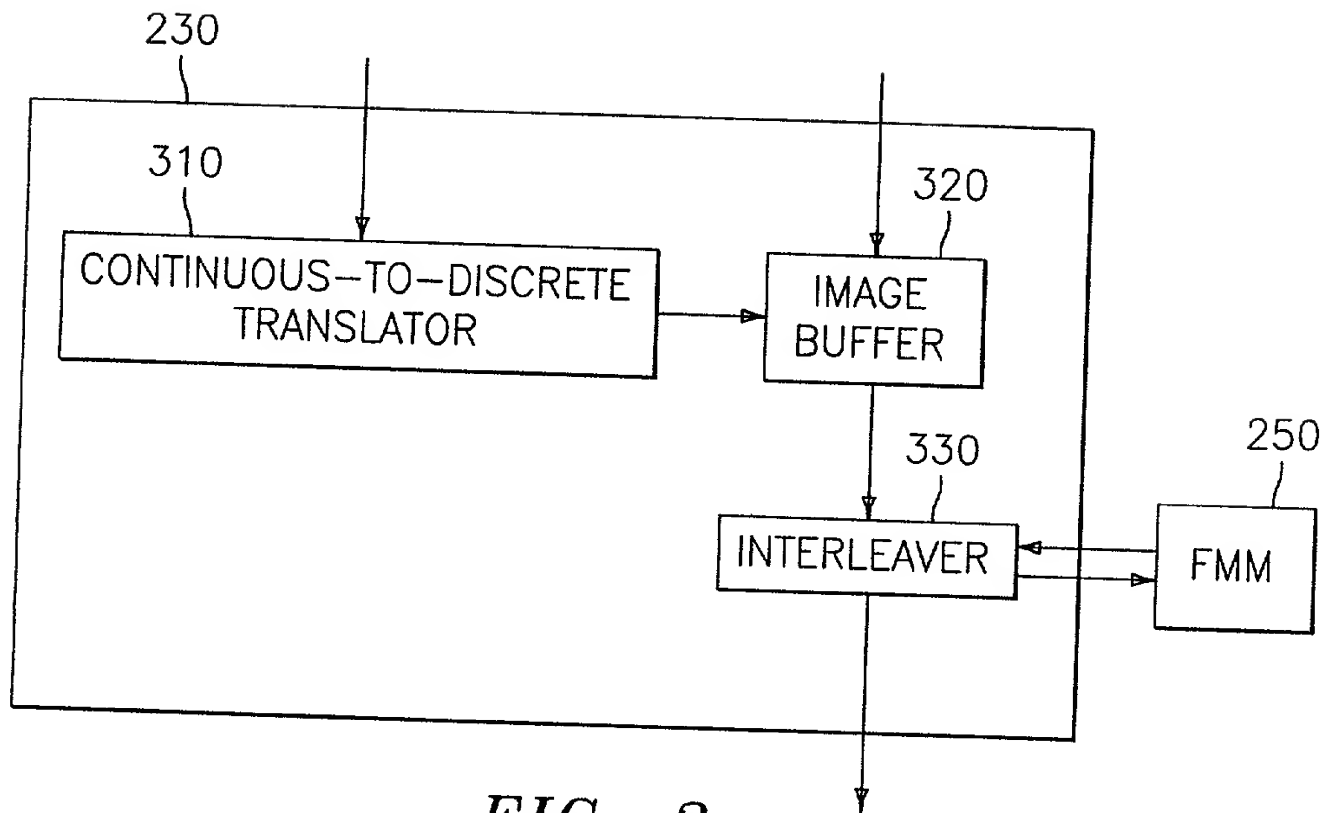


FIG. 3

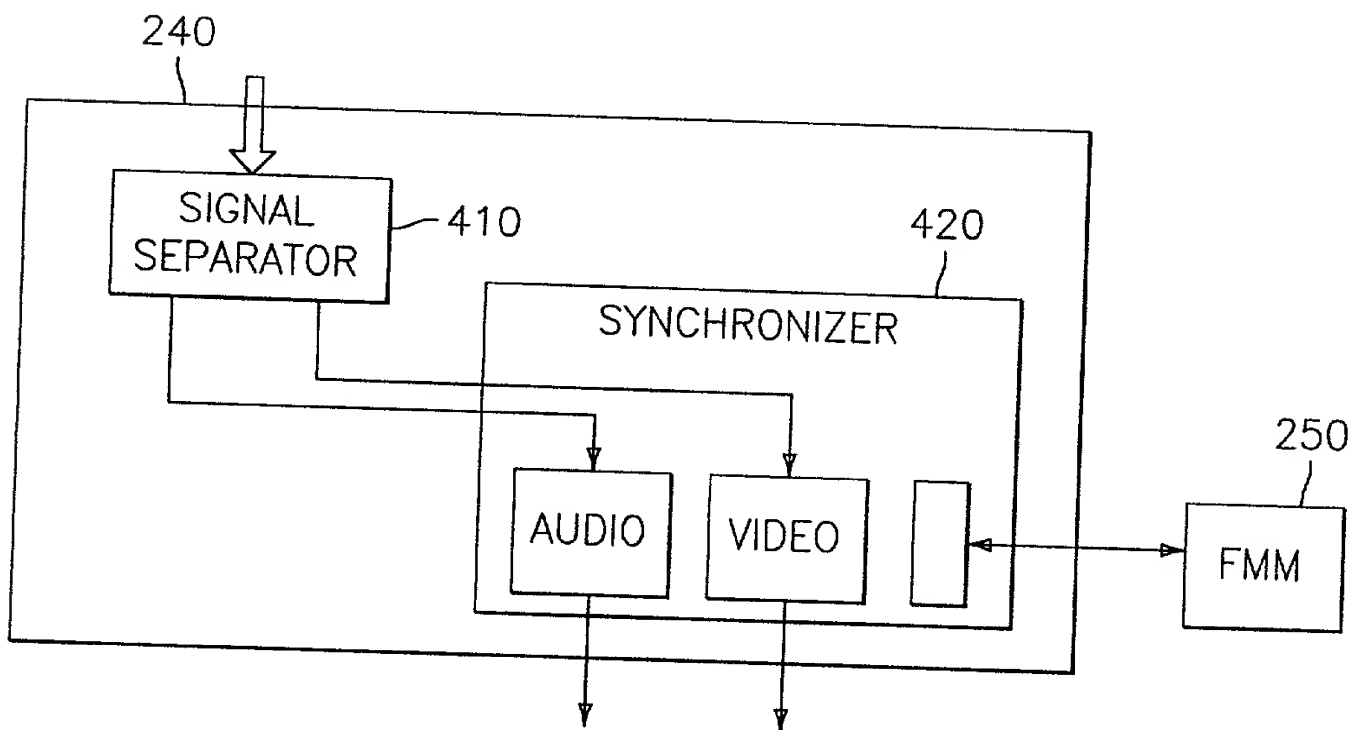


FIG. 4

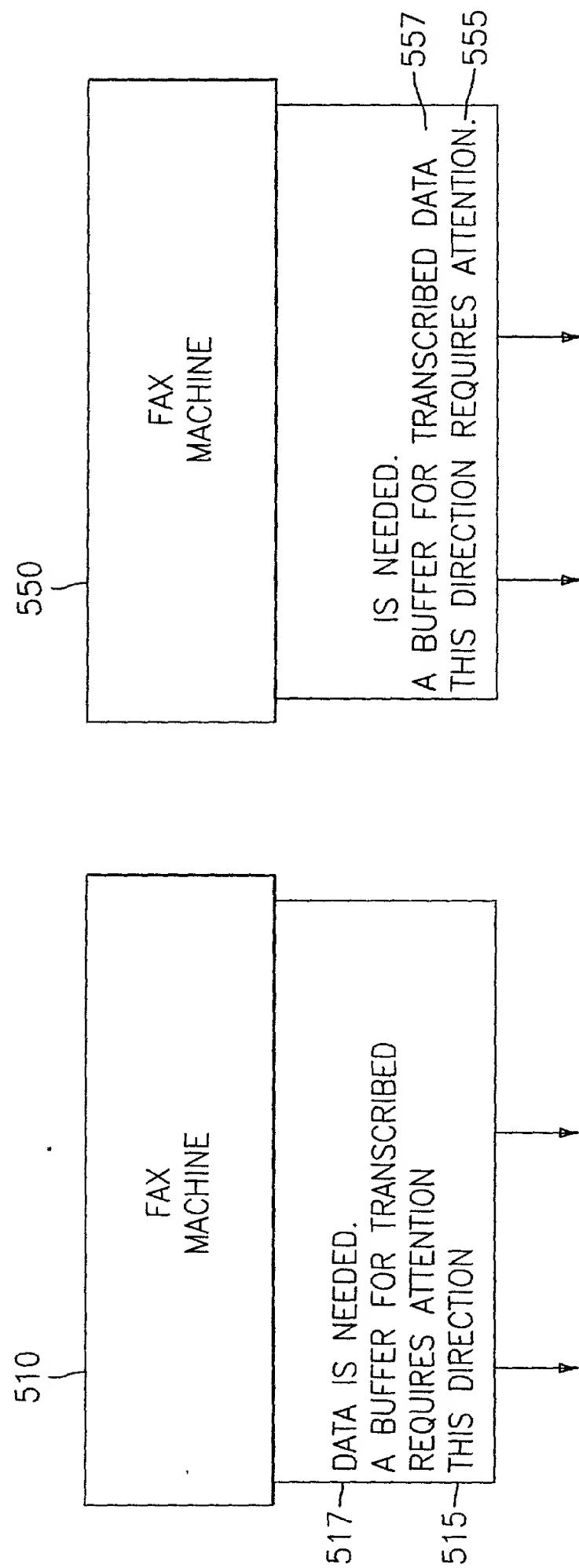


FIG. 5

INPUT:

☐ STENOGRAPH LOCATED AT

☐ A.S.R

☐ VIDEO

☐ AUDIO

☐ OTHER

610

OUTPUT:

TRANSCRIPTION TEXT

☐ FAX MACHINE

☐ PRINTER

☐ OTHER

620

VIDEO

☐ FAX MACHINE

SIZE OF IMAGE: ☐ BY ☐

TIME INTERVAL: ☐

630

AUDIO

☐ COMPUTER SPEAKERS

☐ MONITOR

☐ SPEAKER SYSTEM

☐ OTHER

640

635

637

SYNCHRONIZATION ? ☐ YES ☐ NO

TIME DELAY: ☐ ☐

☐ PROGRAM

FIG. 6

Attorney's Docket No. YOR9-2000-0367 (728-172)

PATENT

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL,
DIVISIONAL, CONTINUATION OR CIP)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type: *(check one applicable item below)*

- ☒ original
- ☐ design
- ☐ supplemental

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT

NOTE: If one of the following 3 items apply then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR CIP.

- ☐ divisional
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- ☐ continuation-in-part (CIP)

INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor *(if only one name is listed below)* or an original, first and joint inventor *(if plural names are listed below)* of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

SYSTEM AND METHOD FOR PROVIDING A PRINTING CAPABILITY FOR A
TRANSCRIPTION SERVICE OR MULTIMEDIA PRESENTATION

SPECIFICATION IDENTIFICATION

the specification of which: *(complete (a), (b) or (c))*

(a) ☒ is attached hereto.

(b) ☐ was filed on _____ as ☐ Serial No. 0 / _____ or ☐ Express Mail No., as Serial No. not yet known _____ and was amended on _____ *(if applicable)*.

NOTE: Amendments filed after the original papers are deposited with the PTO which contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 C.F.R. 1.67.

(c) ☐ was described and claimed in PCT International Application No. _____ filed on _____ and as amended under PCT Article 19 on _____ *(if any)*.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56.

☐ In compliance with this duty there is attached an information disclosure statement in accordance with 37 C.F.R. 1.98.

PRIORITY CLAIM (35 U.S.C. §119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) ☒ no such applications have been filed.

(e) ☐ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

09661723 "091400

**A. PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. §119(a)-(d)**

| COUNTRY (OR INDICATE IF PCT) | APPLICATION NUMBER | DATE OF FILING (day, month, year) | PRIORITY CLAIMED UNDER 35 U.S.C. 119 |
|---------------------------------|-----------------------|--------------------------------------|--|
| | | | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | | | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | | | <input type="checkbox"/> YES <input type="checkbox"/> NO |

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CIP APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. §120.

004450 8278950

POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*

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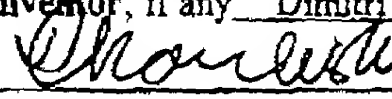
DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name as it should appear on the filing receipt and all other documents.

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Inventor's signature 

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**CHECK PROPER BOX(ES) FOR ANY OF THE FOLLOWING
ADDED PAGE(S) WHICH FORM A PART OF THIS DECLARATION**

- ☐ Signature for subsequent joint inventors.
Number of pages added ____.
- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor.
Number of pages added ____.
- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 C.F.R. §1.47.
Number of pages added ____.

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (CIP) application.
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- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

If no further pages form a part of this Declaration then end this Declaration with this page and check the following item.

- ☒ This declaration ends with this page.

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